

Procedures for CODIS Entry and Upload of DNA Typing Results

1 Scope

These procedures apply to DNA personnel who enter and upload DNA profiles into the **CO**mbined **DNA** Index System (CODIS) and disposition matches in CODIS.

2 Background

CODIS is a collection of DNA databases from forensic and databasing laboratories throughout the United States. CODIS consists of various indices including a forensic index, an offender index, and a missing persons index. CODIS enables federal, state, and local DNA laboratories to exchange and compare DNA profiles in order to link crimes to one another and to offenders. In addition, it allows DNA profiles from unidentified human remains to be linked to forensic samples, offender samples, and to samples involving missing persons.

CODIS functions as three separate tiers: local, state, and national. DNA profiles originate at the local level (LDIS – Local DNA Index System) and are then uploaded to state and national levels to be searched. The SDIS (State DNA Index System) laboratory typically serves as the central point of contact for access to the National DNA Index System (NDIS). NDIS is the national, FBI-administered, centralized database of all DNA profiles contributed by SDIS laboratories. The FBI Laboratory CODIS Unit manages the NDIS database and supports the SDIS and LDIS laboratories by providing computer software, training, and assistance with searches. This tiered approach enables local, state, and federal laboratories to manage the samples in their databases based upon their specific legislative requirements.

The FBI Laboratory enters DNA profiles (i.e., STR profiles or mitochondrial DNA sequences) from forensic and missing persons' samples into LDIS. Eligible profiles are then uploaded to SDIS where they are compared to Federal DNA Database Unit (FDDU) profiles and profiles submitted by the Bureau of Alcohol, Tobacco, Firearms, and Explosives (ATF). Eligible profiles are then uploaded to NDIS where they are compared against all applicable indices. CODIS uploads and searches are conducted on a regular basis.

3 Equipment/Materials/Reagents

Combined DNA Index System (CODIS) Software (version 8.0 or higher)

4 Procedures

4.1 CODIS Specimen Identification Number

4.1.1 DNA profiles are entered into CODIS using a standardized format that is typically generated by the Sample Tracking and Control Software (STACS). The CODIS Specimen ID is a unique identifier that generally consists of the laboratory number, the item identifier and stain identifier (e.g., 2017-00349_1(1)A).

4.1.2 For differentially extracted samples from a single item where profiles from both fractions are eligible for CODIS entry, a suffix must be added in STACS, if applicable, to differentiate the samples. STACS will generate the same CODIS specimen name otherwise (e.g., 2017-00349_1(1)A). This suffix addition can designate which fraction the profile came from (e.g., 2017-00349_1(1)AF, 2017-00349_1(1)AM). For forensic mixtures that result in major/minor designation, the portion of the profile being entered into CODIS may be indicated by adding information into the suffix area in STACS, if applicable (e.g., 2017-00349_1(1)AMAJ, 2017-00349_1(1)AMIN).

4.2 Data Review Requirements Prior to CODIS Entry and Uploading

4.2.1 Each CODIS User will complete the “Annual NDIS Eligibility Training” which is required per the *National DNA Index System (NDIS) Operational Procedures Manual*.

4.2.2 All DNA profiles must undergo primary analysis and technical review by appropriately qualified DNA Examiners prior to CODIS entry. Interpretation/review of the data must be performed in accordance with the appropriate interpretation standard operating procedure (SOP) of the *DNA Procedures Manual*.

4.2.2.1 If samples are outsourced, eligible profiles must undergo technical review by an appropriately qualified DNA Examiner prior to CODIS entry.

4.2.3 The qualified DNA Examiner is responsible for determining whether or not the DNA profile is eligible for entry into CODIS and assigning the specimen to the correct specimen category.

4.2.3.1 The original 13 CODIS core loci are: D3S1358, vWA, D16S539, CSF1PO, TPOX, D8S1179, D21S11, D18S51, TH01, FGA, D5S818, D13S317 and D7S820.

4.2.3.2 Specimen categories available:

- **Forensic Unknown:** This category is for samples from a single source (or a fully deduced profile originating from a mixture) from a putative perpetrator that contains results for all of the original 13 CODIS core loci. This profile shall not have more than 3 alleles at one locus while the remaining loci can have up to 2 alleles. There should be no indication of locus or allelic dropout at the original 13 CODIS core loci. This specimen category is used for uploading to NDIS.

- **Forensic Partial:** This category is for samples originating from a single source (or a fully deduced profile originating from a mixture) from a putative perpetrator with either locus or allelic dropout at one or more of the original 13 CODIS core loci for entry into NDIS or any typed loci for entry into LDIS. This profile shall not have more than 3 alleles at one locus while the remaining loci can have up to 2 alleles. A single-source partial profile that will be entered into SDIS must be entered using the SDIS Only specimen category only. A moderate match estimate (MME) must be calculated for this specimen category.
- **Forensic Mixture:** This category is for samples that contain DNA contributed from more than one source. These profiles can contain loci with 3 or more alleles at 2 or more loci (not to exceed 4 alleles at any locus) and/or loci with 2 alleles that need to be searched at moderate stringency. This specimen category will be used for entry into NDIS (using the original 13 CODIS core loci) and LDIS (using all typed loci). If an allele at a mixed locus can be definitively attributed to the putative perpetrator, it may be designated with a plus sign “+” as an obligate allele. A MME must be calculated for this specimen category.
- **Forensic Targeted:** This category is for samples that contain DNA contributed from either a single source (or a fully deduced profile originating from a mixture) or samples that contain DNA contributed from more than one source. These profiles originate from a forensic partial or a forensic mixture that do not meet the NDIS MME threshold but do meet the match rarity estimate (MRE) threshold if searched at a specified stringency by locus (high or moderate). These profiles must contain at least 8 of the original 13 CODIS core loci. These profiles will only be searched against full single source profiles (i.e., Forensic Unknown, Convicted Offender, Arrestee, Detainee, Legal). All available loci will be searched at high stringency. Any loci with more than 2 alleles will be searched at moderate stringency. Any loci marked as partial will be searched at moderate stringency. This is considered a ‘last resort’ specimen category to upload a specimen to NDIS.
- **SDIS Only:** This category is for samples that originate from a single source (or a fully deduced profile originating from a mixture) or samples that contain DNA from more than one source that do not meet the requirement for uploading to NDIS but do meet the requirements for uploading to SDIS. Note: If a sample is being entered into LDIS or NDIS, do *not* select this category. A MME must be calculated for this specimen category.
- **Biological Child; Biological Father; Biological Mother; Sibling; Maternal Relative; Paternal Relative; Spouse:** These categories are for Relatives of Missing Persons samples that are voluntarily provided as reference samples

where amelogenin is required. All of the original 13 CODIS core loci with no drop out are required for uploading to NDIS. These samples require a signed consent form witnessed by law enforcement in order to be uploaded to CODIS.

- **Deduced Missing Person:** This category is for DNA profiles of a missing person that have been generated by examining intimate items purported to belong to the missing person (i.e. toothbrush). In order to enter these samples into CODIS, amelogenin is required and 7 of the original 13 CODIS core loci are required for upload to NDIS.
- **Missing Person:** This category is for known reference samples from an individual that is missing. The source of the DNA has been verified as originating from the missing person (e.g., tissue from a medical sample). In order to enter these samples into CODIS, amelogenin is required and 7 of the original 13 CODIS core loci are required for upload to NDIS.
- **Unidentified Human Remains (UHR):** This category is for DNA profiles from deceased individuals (e.g., bones) or an individual who is unidentified (e.g., children who can't or others who can't or refuse to identify themselves). In order to enter these samples into CODIS, amelogenin is required and 7 of the original 13 CODIS core loci are required for identity searches at NDIS.

4.2.3.3 The DNA profile from a forensic sample shall only offer those alleles that are attributed to the putative perpetrator(s). Alleles derived from forensic profiles that are unambiguously attributed to a victim or individuals other than the perpetrator(s), such as a consensual partner, will not be offered to CODIS. The qualified DNA Examiner may refer to "A Guide to Determining What is Allowable in the Forensic Index at NDIS", for clarification of what may be entered into CODIS.

4.2.3.4 The DNA results from any locus in which an ambiguity exists in the assignment of one or more alleles to the putative perpetrator(s) may be offered to CODIS. The mere observation of alleles that may be attributed to individuals other than the putative perpetrator, does not in itself preclude offering DNA profiles to CODIS at that locus.

4.2.3.5 Specimen Requirements for Forensic Samples

| Tier | NDIS | SDIS | LDIS |
|-------------------|--|--|--|
| Forensic Unknown | All original 13 CODIS core loci Tri-allele allowed @ 1 core locus Spec Cat: Forensic Unknown | NA | NA |
| Forensic Mixture | ≥ 8 original 13 CODIS core loci ≤ 4 alleles / locus MME ≥ 10 million Obligate alleles “+” Spec Cat: Forensic Mixture | ≥ 7 loci ≤ 4 alleles / locus MME ≥ 1.2 million Obligate alleles “+” Spec Cat: SDIS Only | ≥ 6 loci ≤ 4 alleles / locus MME 1 in size of LDIS Obligate alleles “+” Spec Cat: Forensic Mixture |
| Forensic Partial | ≥ 8 original 13 CODIS core loci MME ≥ 10 million Mark partial loci Spec Cat: Forensic Partial | ≥ 7 loci MME ≥ 1.2 million Mark partial loci Spec Cat: SDIS Only | ≥ 6 loci MME 1 in size of LDIS Mark partial loci Spec Cat: Forensic Partial |
| Forensic Targeted | ≥ 8 original 13 CODIS core loci ≤ 4 alleles / locus MRE ≥ 10 million Obligate alleles “+” Mark partial loci Spec. Cat: Forensic Targeted | NA | NA |
| SDIS Only | NA | See above for Forensic Mixture, Forensic Partial | NA |

4.2.4 Due to the low stringency searches among the Missing Persons, Relatives of Missing Persons, and Unidentified Human Remains Indices, profiles to be entered into these indices will not include homozygous alleles below the stochastic threshold established by the appropriate SOP of the *DNA Procedures Manual*. Profiles for entry into these indices may include heterozygous typing results below the stochastic threshold established by the appropriate interpretation SOP of the *DNA Procedures Manual*.

4.2.5 Samples for entry into the Missing Persons, Relatives of Missing Persons, and Unidentified Human Remains Indices will not include results for loci with tri-alleles. If a tri-allele is observed in an original 13 CODIS core locus, contact the casework LDIS Administrator or casework Missing Persons Program Manager for additional guidance.

4.2.6 Samples entered into the Missing Persons and Unidentified Human Remains Indices should attempt DNA typing for autosomal as well as the appropriate lineage marker(s).

4.2.7 All Relatives of Missing Persons samples must be typed for autosomal markers. In addition, at least one member of the pedigree, should be typed using an appropriate lineage marker.

4.2.8 A complete mitochondrial DNA (mtDNA) sequence includes positions 16024 to 16365 and 73 to 340 (HV1 and HV2). Profiles that meet or exceed this range are acceptable for uploading to NDIS. Profiles that are less than the NDIS definition for completeness can be stored in LDIS.

4.2.9 Profiles that have complete mtDNA sequences, but have fewer than 7 of the original 13 CODIS core loci, may have the autosomal data stored in CODIS for evaluation purposes.

4.2.10 Composite DNA profiles for forensic samples may be entered into CODIS. Uploading the maximum amount of genetic information available for a given qualifying DNA profile decreases the likelihood of spurious matches within a database the size of NDIS. To reasonably ensure that a DNA profile compiled from genetic information derived from separate extractions, amplifications, and/or injections has arisen from the same individual, the resultant DNA profile must 1) be compiled from different items from a common source (e.g., replicate vaginal swabs, swabs from the same orifice such as vaginal and cervical swabs), multiple cuttings of the same evidentiary stain, or cuttings from different stains of the same grouping on a given evidence item and 2) demonstrate concordance as defined in the appropriate interpretation SOP of the *DNA Procedures Manual*.

4.2.11 Additional questions about the suitability/eligibility of a particular DNA profile for CODIS should be directed to the casework LDIS Administrator, casework LDIS Alternate Administrator, FBI State Administrator, FBI State Alternate Administrator, or the DNA Technical Leader.

4.3 Entering and Uploading DNA Profiles into CODIS

4.3.1 Profiles eligible for entry into LDIS, SDIS, and NDIS will be entered into the appropriate specimen category (e.g., Forensic Unknown) and transferred to the appropriate index (e.g., Forensic).

4.3.2 Duplicate samples will not be marked for upload to NDIS.

4.3.3 The appropriate DNA profiles are entered into LDIS/SDIS by the casework LDIS Administrator (or any person with administrative rights who has been trained to use the CODIS software). Data entry and uploading of DNA profiles will be performed routinely following NDIS procedures and instructions for the current version of the CODIS software.

4.3.3.1 Profiles and/or pedigrees that are manually entered into the CODIS software should be verified by the LDIS Administrator (or any person with administrative rights who has been trained to use the CODIS software).

4.3.4 The casework LDIS Administrator (or any person with administrative rights who has been trained to use the CODIS software) will review the SDIS and NDIS Reconciliation Reports to confirm the receipt and processing of the upload to SDIS and NDIS.

4.3.5 The DNA profiles at LDIS are uploaded to SDIS according to parameters set by the FBI State Administrator or the FBI State Alternate Administrator. Profiles not eligible for entry into SDIS (e.g., staff profiles) will not be marked for upload.

4.3.6 The DNA profiles at SDIS are uploaded to NDIS according to parameters set by the NDIS Custodian.

4.3.7 Datalinking may be performed by the casework LDIS Administrator (or any person with administrative rights who has been trained to use the CODIS software), as appropriate, following instructions for the current version of the CODIS software. DNA profile information may also be exported and provided to another laboratory for datalinking purposes.

4.4 Routine Searches of the Database

4.4.1 The CODIS software will be routinely checked for candidate matches and ranks by the casework LDIS Administrator (or any person with administrative rights who has been trained to use the CODIS software). A candidate match is a possible match between two or more DNA profiles discovered by the CODIS software. Ranks are potential associations between UHR samples and pedigree trees comprised of Relatives of Missing Persons samples.

4.4.2 Candidate matches and ranks will be provided to the casework LDIS Administrator (or any qualified DNA Examiner) for evaluation for moderate or low stringency hits and to the casework LDIS Administrator (or any qualified DNA Examiner or any person with administrative rights who has been trained to use the CODIS software) for evaluation for high stringency hits.

4.5 DNA Index of Special Concern (DISC) (Rapid-Enabling of Samples)

4.5.1 Qualified DNA Examiners will determine which samples meet DISC eligibility. In order to be DISC eligible, samples must be entered into the Forensic Unknown specimen category as source ID no (i.e., unsolved). These cases must be from unsolved cases of significant public safety concern. These cases of significant public safety concern are defined as sexual assault cases, homicide cases, kidnapping cases, and terrorism cases.

4.5.2 Prior to the casework LDIS administrator (or any person with administrative rights who has been trained to use the CODIS software) enrolling DISC eligible samples into the DISC, these samples must have been searched in SDIS and NDIS at least once.

4.5.3 Casework Metadata must be entered prior to unsolved, Forensic Unknown samples being enrolled into DISC. This metadata, if applicable, should be compiled by the qualified DNA Examiner. The metadata will be entered into the CODIS software by the casework LDIS administrator (or any person with administrative rights who has been trained to use the CODIS software). The required metadata for DISC samples is:

- Investigative ID: ORI of investigative agency (10 characters). This ORI is the agency's ORI that the investigative agency monitors 24 hours a day for NCIC Hit Confirmation.

- Investigative Case Tracking ID: (32 characters) Investigative agency's reference/case ID
- Investigative phone number: (14 characters format (xxx) xxx-xxxx) Point of Contact of case
- Statute of Limitations: (MM-DD-YYYY): Information must be obtained from investigator or prosecutor's office
- Offense Description: (64 characters): Description of type of crime that yielded type of evidence
- Extradition Information: (255 characters): Investigating agency must be willing to extradite; minimum information is "yes"
- Investigating Agency Contact Information: (255 characters): Any additional contact information or contacts such as contacts to investigative agency's 24 hour Wants and Warrants desk or other case specific information

4.5.4 Eligibility of DISC samples must be re-examined every year. Contact shall be made by the casework LDIS administrator (or any qualified DNA Examiner or any person with administrative rights who has been trained to use the CODIS software or anyone with access to STACS) with the investigative agency to confirm the case is still active and the profile continues to meet DISC eligibility requirements.

4.5.5 DISC samples will be periodically checked for hits to SDIS/NDIS samples by the casework LDIS administrator (or any person with administrative rights who has been trained to use the CODIS software). If the source ID has changed to 'Yes', these DISC samples will be un-enrolled as these samples are no longer eligible for DISC.

4.6 Review of the Match/Rank Detail Report

4.6.1 The casework LDIS Administrator (or any qualified DNA Examiner or any person with administrative rights who has been trained to use the CODIS software) will review the Match/Rank Detail Reports and supporting case file documentation, if necessary, to determine if confirmation of the match/rank is required if the match/rank is at high stringency.

4.6.1.1 The casework LDIS Administrator (or any qualified DNA Examiner) will review the Match/Rank Detail Reports and supporting case file documentation, if necessary, to determine if confirmation of the match/rank is required if the match/rank is at moderate or low stringency.

4.6.1.2 If the candidate match is determined to be a match and confirmation is required, the casework LDIS Administrator (or any person with administrative rights who has been trained to use the CODIS software) will record the following information, as appropriate:

- Match ID #
- FBI Specimen ID #
- State Specimen ID #
- Match stringency
- Indices of specimens (e.g., Forensic vs. Forensic, Forensic vs. Convicted Offender)

- Point of contact information for other laboratory (or Federal DNA Database Unit)
- Results of search for previous CODIS matches

4.6.1.3 For CODIS Missing Persons candidate ranks, the casework LDIS Administrator (or any qualified DNA Examiner) will review any calculated ranking information the software may have given to a match (i.e., Joint Pedigree Likelihood Ratio (JPLR) and/or combined Likelihood Ratio (LR)) and supporting case file documentation, if necessary, in an effort to evaluate the association. The following information will be recorded as appropriate:

- Rank ID #
- FBI Specimen ID #
- Pedigree ID#
- Indices of specimens (e.g., UHR vs. Pedigree, UHR vs. Convicted Offender)
- Point of contact information for other laboratory (or Federal DNA Database Unit)
- Results of search for previous CODIS ranks

4.6.2 If the candidate match/rank is determined not to be an association the casework LDIS Administrator (or any person with administrative rights who has been trained to use the CODIS software) will disposition the match/rank accordingly and no further action is required.

4.6.3 Forensic Sample to Forensic Sample Match

A forensic match occurs when two or more DNA profiles developed from crime scene evidence submitted from forensic laboratories match to one another.

- a. The casework LDIS Administrator (or any person with administrative rights who has been trained to use the CODIS software) will contact the matching forensic laboratory to verify the match and exchange case information, as detailed in the *NDIS Operational Procedures Manual*. This information exchange will be recorded in the case file. The contributing agency will be provided with information regarding the forensic match. If appropriate, the casework LDIS Administrator (or any person with administrative rights who has been trained to use the CODIS software) will change the source ID box in LDIS.

4.6.4 Forensic Sample to Offender Sample Match

An offender match occurs when a DNA profile obtained from a forensic sample matches to a convicted offender, arrestee, detainee and/or legal sample.

- a. The casework LDIS Administrator (or any person with administrative rights who has been trained to use the CODIS software) will determine if the contributor of the forensic sample is unknown or if the sample was reported as a match to a subject. Additional information may be collected from appropriate FBI databases to determine if the case is solved.

- b. If the candidate forensic sample is from a solved case, the casework LDIS Administrator (or any person with administrative rights who has been trained to use the CODIS software) will confirm the identity of the subject with the convicted offender laboratory and disposition as a conviction match upon name confirmation.
- c. If the candidate forensic sample is from an unsolved case, the casework LDIS Administrator (or any person with administrative rights who has been trained to use the CODIS software) will contact the convicted offender laboratory for confirmation of the hit, as detailed in the *NDIS Operational Procedures Manual*. This information will be recorded in the case file.
 - 1. In the case of a non-qualifying offense, the contributor will be provided with written notification which should include the offender's name if provided by the offender laboratory and a point of contact for the offender laboratory.
 - 2. If upon evaluation of a hit, it is determined that a forensic sample is not eligible for database entry, the sample will be removed from the database. The contributor will be provided with written notification which should include the offender's name and information regarding the CODIS ineligibility of the forensic sample.
- d. The casework LDIS Administrator (or any person with administrative rights who has been trained to use the CODIS software) will update the source ID box from 'No' to 'Yes', if appropriate.
- e. For Unsolicited DNA Notifications (UDN) for Rapid hits received by the CODIS message center, the casework LDIS administrator (or any person with administrative rights who has been trained to use the CODIS software) will retrieve these UDN messages and contact the contributor to verify that the contributor has received their copy of the UDN and that the contributor is following up on this investigative lead in a timely fashion.

4.6.5 The casework LDIS Administrator (or any person with administrative rights who has been trained to use the CODIS software) will determine whether or not the match provided investigative information and provide this to the CODIS Unit.

4.6.6 Appropriate forensic and offender matches will be verified and recorded by an appropriately qualified DNA Examiner. Written notification containing the match information will be provided to the contributing agency.

4.6.6.1 For forensic mixtures and forensic targeted specimens (as appropriate), matches to single source samples (with the exception of conviction matches) will be verified using STRmix™. A match will be declared if the likelihood ratio (LR) is at least approximately one in the size of the NDIS database for an NDIS match and at least approximately one in the size of the SDIS database for an SDIS match.

- a. If a new STRmix™ deconvolution is needed in order to evaluate a match, this deconvolution must be technically reviewed by an appropriately qualified DNA examiner prior to issuing the written notification to the contributing agency.
- b. If an LR from Previous run from STRmix™ is needed in order to evaluate a match, only an administrative review by the Unit Chief (or any qualified DNA examiner) is required prior to issuing the written notification to the contributing agency.

4.6.7 Missing Persons Matches/Associations

4.6.7.1 A Missing Persons association occurs when a rank is evaluated by the casework LDIS Administrator (or any qualified DNA Examiner) and determined to potentially be an association between a UHR and relatives of that Missing Person. Ranks are evaluated on the following information, if applicable:

- Joint Probability Likelihood Ratio/Combined Likelihood Ratio
 - Lineage Markers
 - Metadata
- a. The casework LDIS Administrator (or any person with administrative rights who has been trained to use the CODIS software) will verify that the corresponding metadata between the UHR and family reference sample(s) is consistent and contact the other laboratory to exchange case information, if necessary, as detailed in the *NDIS Operational Procedures*. This information will be recorded in the case file.
 - b. Written notification will be provided to the contributing agency to include supporting statistical information (e.g., kinship index), as appropriate. Any notification containing statistical information must be technically reviewed by an appropriately qualified DNA Examiner.

4.6.7.2 Missing Persons/UHR matches to Offender Samples occur when a DNA profile obtained from a Missing Person or UHR sample matches to a convicted offender sample.

- a. The casework LDIS Administrator (or any person with administrative rights who has been trained to use the CODIS software) will contact the convicted offender laboratory for confirmation of the hit, as detailed in the *NDIS Operational Procedures*. This information will be recorded in the case file.
- b. Upon receiving confirmation from the convicted offender laboratory, written notification will be provided to the contributing agency to include supporting statistical information (e.g., likelihood ratio as appropriate), when appropriate. Any notification containing statistical information must be technically reviewed by an appropriately qualified DNA Examiner.

4.6.7.3 A lineage marker only association occurs when an association is made between a UHR containing no or very limited autosomal STR data and a pedigree which includes mtDNA or Y-chromosome data.

- a. The casework LDIS Administrator (or any person with administrative rights who has been trained to use the CODIS software) will verify that the corresponding metadata between the UHR and family reference sample(s) is consistent and contact the other laboratory to exchange case information, if necessary, as detailed in the *NDIS Operational Procedures*. This information will be recorded in the case file.
- b. Written notification will be provided to the contributing agency to include supporting statistical information, when appropriate. Any notification containing statistical information must be technically reviewed by an appropriately qualified DNA Examiner.

4.6.8 Written Notification of a Match or Positive Association

4.6.8.1 All written notifications will be administratively reviewed and technically reviewed, as appropriate, by the Unit Chief (or any qualified DNA Examiner) in accordance with the appropriate Laboratory Operations Manual (LOM) practice(s). This review will also verify the following information:

- Administrative information, if applicable (including specimen/sample, investigator, offender).
- Technical information related to missing persons associations, if applicable.
- Profile and specimen ID submitted for entry into CODIS are consistent with the profile and specimen ID on the CODIS Match Detail Reports, if applicable.

4.6.8.2 The administrative and, if appropriate, technical reviewer will record the completion of their review. This record will consist of the signature of the administrative and, if appropriate, technical reviewer and the date of the review. Records regarding the hit (e.g., Match Detail Report, a copy of the report) will be maintained in accordance with the appropriate LOM practices.

4.6.8.3 Written notifications will be issued in accordance with the appropriate LOM practices.

4.7 CODIS Search Requests

4.7.1 The casework LDIS Administrator (or any person with administrative rights who has been trained to use the CODIS software) will update the NDIS batch target file and search against the forensic and missing persons/UHR samples monthly. The date the batch target file is updated and searched as well as the initials of the individual performing the update and search will be recorded.

4.7.2 One-time search requests of LDIS/SDIS for forensic DNA profiles from other NDIS participating laboratories will be individually evaluated by the casework LDIS Administrator, casework LDIS Alternate Administrator, FBI State Administrator or FBI State Alternate Administrator prior to initiating a manual keyboard search. One-time search requests of other laboratories must be approved and requested by the casework LDIS Administrator, casework LDIS Alternate Administrator, FBI State Administrator, or FBI State Alternate Administrator.

4.7.3 A candidate match found with a target profile will be reviewed by the casework LDIS Administrator (or any qualified DNA Examiner) for moderate or low stringency hits and by the casework LDIS Administrator (or any qualified DNA Examiner or any person with administrative rights who has been trained to use the CODIS software) for high stringency hits and written notification will be provided if necessary.

4.7.4 No “victim or suspect” searches will be conducted of the FBI LDIS/SDIS data.

4.8 NDIS Manual Keyboard Searches by NDIS Custodian

4.8.1 A manual keyboard search may be requested if a forensic DNA profile from a serious violent crime (1) must be searched before the routine upload of DNA data due to exigent circumstances or (2) does not meet the required minimum number of CODIS Core Loci for uploading the DNA profile to NDIS but does contain at least 7 of the original 13 CODIS Core Loci and satisfies a statistical threshold for match rarity based upon the search criteria by locus of one in ten million. A manual keyboard search shall not be used in place of the routine upload and search.

4.8.2 The qualified DNA Examiner requesting a keyboard search will ensure the request complies with the current NDIS Procedures.

4.8.2.1 The DNA profile to be keyboard searched must be interpreted by a qualified DNA Examiner. The keyboard search request records and supporting data for the profile and the associated controls must be technically reviewed by a second qualified DNA Examiner and the profile must be eligible for retention in the database (i.e., LDIS, SDIS, or NDIS). The profile to be searched and record of the interpreting Examiner and Technical Reviewer must be recorded in the case file.

4.8.3 The casework LDIS Administrator, casework LDIS Alternate Administrator, or a DNA Examiner with CODIS software training will search the profile requested for keyboard search in LDIS.

4.8.4 The keyboard search request records, including record of the interpreting Examiner and Technical Reviewer, will be forwarded to the FBI State Administrator or FBI State Alternate Administrator who will formally request, in writing, the NDIS search.

4.8.5 A candidate match from a manual keyboard search will be reviewed by the casework LDIS Administrator (or any qualified DNA Examiner) for a moderate stringency hit and by the casework LDIS Administrator (or any qualified DNA Examiner or any person with

administrative rights who has been trained to use the CODIS software) for a high stringency hit and written notification will be provided if necessary.

4.9 Removal of a Sample from CODIS

4.9.1 Deletion of a DNA profile in response to a court order that is specific to removing a forensic unknown DNA profile from CODIS is referred to as an expungement.

4.9.1.1 The casework LDIS Administrator, casework LDIS Alternate Administrator or Missing Persons Program Manager will review the court order to ensure it is complete.

4.9.2 Deletion of a DNA sample from CODIS upon verification of the fact that the DNA record is not eligible or suitable for inclusion in CODIS is known as an administrative removal. Administrative removal may be warranted if:

- The contributing agency notifies the laboratory in writing that removal is warranted.
- Additional information indicates the sample is not appropriate for CODIS and/or does not meet the requirements set forth in the *NDIS Operational Procedures Manual*.
- An identification has been made for a Missing Person/UHR.

4.9.3 The casework LDIS Administrator (or any person with administrative rights who has been trained to use the CODIS software) will delete the DNA profile using the CODIS software and record this action electronically (see *NDIS Operational Procedures Manual*). The LDIS specimen deletion report will also be maintained electronically.

4.10 System Operations - Backup Procedures

4.10.1 The LDIS backup will be conducted by an FBI employee or approved contractor.

4.10.2 The backup will include all relevant drives and the registry from the LDIS server.

4.10.3 Tapes are stored in safes at the FBI Laboratory and at an off-site location.

4.10.4 In the event of an emergency and/or catastrophic loss, the backup tapes may be used to restore the LDIS.

4.11 Security

4.11.1 Only authorized personnel will have physical access to CODIS servers and terminals.

4.11.2 All CODIS users are responsible for protecting the security of the software as a user.

4.11.3 When a user is finished with a CODIS work session, the user will log out of CODIS. If the user has not completed their CODIS work session but needs to move to an area in which

they can no longer visually observe the CODIS server/terminal, they must lock the screen or log out of CODIS.

5 Standards and Controls

Not applicable.

6 Sampling or Sample Selection

Not applicable.

7 Calculations

Not applicable.

8 Measurement Uncertainty

Not applicable.

9 Limitations

9.1 A legal expungement cannot be performed without a court order signed by a judge.

9.2 All profiles entered into the Forensic Index maintained by the DNA Casework Unit (DCU) or Biometrics Analysis Unit (BAU) will meet the criteria described in “*A Guide to Determining What is Allowable in the Forensic Index at NDIS.*”

10 Safety

Not applicable.

11 References

FBI Laboratory Quality Assurance Manual (QAM)

FBI Laboratory Operations Manual (LOM)

DNA Procedures Manual

National DNA Index System (NDIS) Operational Procedures Manual

Guide to Determining What is Allowable in the Forensic Index at NDIS

Federal Bureau of Investigation, Quality Assurance Standards for Forensic DNA Testing Laboratories, latest version.

Case Management Users Manual, RoboTech Sciences, latest version.

| Rev. # | Issue Date | History |
|--------|------------|--|
| 12 | 10/26/18 | <p>Changed DCU Examiner to DNA Examiner throughout. Added qualified to DNA Examiner throughout. Removed CODIS from State Administrator titles throughout. 3 Changed to version 8.0 or higher. 4.1.2 Added additional example. 4.2.1 Relocated from 4.2.2.2. 4.2.3.1 Relocated and added info describing specimen categories. 4.2.3.4 Put requirements for specimens in table. 4.2.4 to 4.2.7 Added additional info for missing person case samples. 4.5 Added DISC information. 4.6.4 Added Rapid hit info in e. 4.6.7.1 Specified for legacy cases that are not assigned a lab number in FA. 4.6.9.3 Revised to apply to lineage marker associations. 4.10.2 Removed specific server designation</p> |
| 13 | 04/26/19 | <p>4.2.3.1 Listed the 13 CODIS core loci 4.2.3.2 Added forensic targeted 4.2.3.5 Added forensic targeted and marking partial loci 4.6.6.1 Added guidance for using STRMix 4.6.8 Relocated written notification info from 4.6.7 and added header.</p> |

Approval

Redacted - Signatures on File

DNA Technical Leader

Date: 04/24/2019

DCU Chief

Date: 04/24/2019

Acting BAU Chief

Date: 04/24/2019

QA Approval

Quality Manager

Date: 04/24/2019